

Corridor Traffic Management

21ST CENTURY OPERATIONS USING 21ST CENTURY TECHNOLOGIES

CORRIDOR TRAFFIC MANAGEMENT CHALLENGES

When congested traffic conditions occur on one roadway, travelers typically respond by shifting to another route, selecting a different roadway (freeway versus surface street), adjusting their trip to another time of day, or remaining on their current route encountering significant delays. These disruptions range in scale, frequency, predictability, and duration. Depending on the cause, they have the potential to affect a number of transportation facilities or modes.

WHY WE'RE CONCERNED

In the 21st century we have the potential to significantly improve mobility and reduce the effects of congestion when travel is disrupted on freeways or surface streets within urban corridors. Agencies have placed a lower priority and a lower focus on continuously improving the real-time coordination, management, and control of traffic in response to changing traffic and roadway conditions across jurisdictions' boundaries or between freeways and surface streets. Here are a few examples of why improvements are important and needed:

- Traffic surveillance capabilities do not typically exist along surface streets, and there are significant gaps in surveillance along freeways in metropolitan areas
- Most agencies proactively manage and control traffic on only limited portions of the freeway and surface street networks in metropolitan areas
- There is limited planning and coordination to improve the management and control of traffic between freeways and surface streets in urban corridors
- Operational strategies and control plans and procedures do not typically exist for agencies to implement in response to congestion-causing events that occur within freeway corridors

WHAT WE'VE LEARNED

Proactively managing and coordinating the control of traffic is a viable and effective strategy to improve the safety, efficiency and reliability of traffic on and between freeways and surface



streets within urban corridors. Agencies have successfully demonstrated that these practices can reduce travel times, improve travel reliability, increase traffic throughput, decrease crashes, and reduce the number of stops and delay at traffic signals.

Achieving these results requires an aggressive traffic operations program, strong partnerships between agencies, commitment of necessary resources and support, deployment of technology and traffic control systems, development of operational strategies and control plans, and proactive management and control of traffic within freeway corridors in metropolitan areas. Using managed lane strategies, alternate routing of traffic, operational strategies, coordinated control plans, proactive management and control of traffic, and coordinated response to changing conditions offers the potential to achieve significantly greater use of the existing roadway capacity.

Examples of near term opportunities agencies may pursue include:

- Establish formal agreements and document operational policies
- Develop protocols, procedures, operational strategies and control plans
- Deploy traffic control systems, establish and maintain interfaces between systems, and implement Intelligent Transportation System (ITS) technologies to control traffic and share information

- Coordinate traffic control at all traffic signals and between freeway interchanges with urban corridors
- Deploy traffic management centers
- Use managed lane operational and access control strategies within corridors

Corridor traffic management can positively mitigate the impacts of congestion and improve traffic operations within freeway corridors in urban and rural areas. Motorists traveling within these corridors will experience safer, more efficient and reliable travel due to fewer interruptions resulting from various congestion-causing events.



FUTURE DIRECTION

The Federal Highway Administration (FHWA) has defined priority areas for attention and near term action, including congestion mitigation. FHWA will pursue initiatives to provide incentives for the private sector to develop the needed tools, increase agency awareness of the benefits, encourage regional planning and coordination, deploy technologies, and use recommended practices to proactively manage and control traffic within freeway corridors in response to changing conditions. These initiatives will involve:

Collaboration and Consensus Building

Formulate and gain acceptance of the research and technology transfer needs to advance the practices of agencies

Raise Awareness and Motivate Action

Facilitate peer-to-peer exchanges, regional workshops, executive briefings, and tabletop exercises to raise agencies' awareness of the benefits to improving current practices

Technical Guidance and Capacity Building

Develop and deliver guidance material and training and self-assessment tools for agencies to develop action plans to improve current practices

Applied Research

Develop tools, conduct field operational tests, quantify potential benefits, and prepare materials to assist with implementing innovative applications

The near term priorities for projects to be pursued will focus on:

- **Partnerships:** Develop and sustain partnerships to continuously improve the management and control of traffic within and across jurisdictional boundaries
- **Proactive Management and Control:** Use a proactive approach to monitoring, managing, and controlling traffic in response to changing conditions within freeway corridors
- **Integrated Real-Time Traffic Control:** Develop new integrated control capabilities and algorithms, test innovative applications and tools, evaluate operational strategies, and document benefits

2004 EXPECTED PRODUCTS AND MILESTONES

- Distribute brochure, primer, and handbook on coordinated freeway and surface street traffic management plans and procedures
- Develop multiyear plan identifying research needs and projects to advance current practices with proactively managing and controlling traffic within freeway corridors

